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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,727	11/10/2003	Warren M. Farnworth	2269-5558F US	4992

24247 7590 06/28/2005

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EXAMINER

KASENGE, CHARLES R

ART UNIT PAPER NUMBER

2125

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/705,727

Applicant(s)

FARNWORTH, WARREN M.

Examiner

Charles R. Kasenge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/7/05</u> . | 6) <input type="checkbox"/> Other: ____ |

RD

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Hunter U.S.

Patent 6,630,995. Referring to claims 1, 2, 21, and 22, Hunter discloses a programmable material consolidation apparatus, comprising: a support element (Fig. 6, 48); a selective material consolidation system configured to form an object on at least one of the support element and a substrate positioned on the support element (Fig. 6, 37 and 48); a machine vision system oriented to view the support element and an object under fabrication, the machine vision system including a field of vision which is at least substantially coextensive with a field of exposure of the selective material consolidation system (col. 6, lines 45-62); and at least one control element in communication with the selective material consolidation system and the machine vision system (col. 16, lines 54-62). Hunter discloses the programmable material consolidation apparatus of claim 1, wherein the machine vision system includes a locationally stationary camera positioned to avoid interference with the selective material consolidation system (col. 10, lines 56-65).

Referring to claims 2-7, 21-23, and 25-28, Hunter discloses the programmable material consolidation apparatus of claim 2, wherein the locationally stationary camera comprises a charge-coupled device (col. 10, lines 56-65). Hunter discloses the programmable material

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consolidation apparatus of claim 2, further comprising: a magnification element associated with the locationally stationary camera to magnify an image viewed thereby (col. 10, lines 56-65).

Hunter discloses the programmable material consolidation apparatus of claim 4, wherein the magnification element optically (col. 27, lines 10-40) or digitally magnifies the image (col. 36, lines 32-37). Hunter discloses the programmable material consolidation apparatus of claim 2, wherein the machine vision system further includes a rotational element associated with the locationally stationary camera to facilitate orientation of the locationally stationary camera to a selected location of the field of exposure (col. 16, lines 54-62).

Referring to claims 8-11 and 31-35, Hunter discloses the programmable material consolidation apparatus of claim 1, wherein the machine vision system includes: a scan element (col. 9, lines 6-44); and a camera configured to view a portion of the field of exposure and carried by the scan element, the scan element being configured to move the camera to a plurality of locations over the field of exposure (col. 12, lines 57-66). Hunter discloses the programmable material consolidation apparatus of claim 8, wherein the scan element positions the camera proximate to a location in which selective material consolidation is to be effected (col. 12, lines 57-66). Hunter discloses the programmable material consolidation apparatus of claim 9, wherein the camera has an image resolution of about 0.0001 inch (col. 14, lines 23-33). Hunter discloses the programmable material consolidation apparatus of claim 8, wherein the camera comprises a charge-coupled device or a complementary metal-oxide-semiconductor device (col. 6, lines 45-62).

Referring to claims 12-17 and 39-44, Hunter discloses the programmable material consolidation apparatus of claim 8, wherein the scan element includes: an x-axis element (col.

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11, lines 56-64); and a y-axis element oriented substantially perpendicular to the x-axis element (col. 12, lines 9-22). Hunter discloses the programmable material consolidation apparatus of claim 12, wherein the camera is positioned at a location where the x-axis element and the y-axis element intersect one another (col. 12, lines 9-22 and Fig. 8C). Hunter discloses the programmable material consolidation apparatus of claim 12, further comprising an actuator associated with each of the x-axis element and the y-axis element (col. 20, lines 45-60). Hunter discloses the programmable material consolidation apparatus of claim 14, wherein each actuator is configured to move its associated x-axis element or y-axis element incrementally (col. 20, lines 45-60). Hunter discloses the programmable material consolidation apparatus of claim 14, wherein each actuator is configured to move its associated x-axis element or y-axis element substantially continuously (col. 20, lines 45-60). Hunter discloses the programmable material consolidation apparatus of claim 14, wherein operation of each actuator occurs under control of the at least one control element (col. 16, lines 54-62).

Referring to claims 18-20, 24, 29, 30, 32, and 36-38, Hunter discloses the programmable material consolidation apparatus of claim 8, wherein the at least one control element receives signals from the camera indicating locations of features on or over the support element (col. 16, lines 54-62). Hunter discloses the programmable material consolidation apparatus of claim 18, wherein the at least one control element is configured to cause the selective material consolidation system to effect fabrication of one or more objects at a precise location on at least one of the support element and a substrate thereon based on a location of at least one feature viewed by the machine vision system (col. 5, lines 56-67). Hunter discloses the programmable material consolidation apparatus of claim 1, further comprising: at least one fiducial mark

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associated with the support element for providing a reference point for the machine vision system (col. 19, lines 53-66).

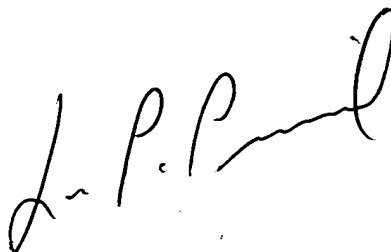
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles R. Kasenge whose telephone number is 571 272-3743. The examiner can normally be reached on Monday through Friday, 8:30 - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CK
June 21, 2005

A handwritten signature in black ink, appearing to read 'L. Picard', with a stylized flourish at the end.

**LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**